

Does smartphone usage behavior influence willingness to agree to passive data collection via a mobile app?

Julneth Martinez Atencio, University of Neuchâtel Caroline Roberts, University Lausanne Jessica Herzing, University of Bern Daniel Gatica-Perez, EPFL



Mobile Device Use in Switzerland



"...simply possessing a mobile device does not necessarily indicate a willingness to use it for mobile responding"

(de Bruijne et al., 2014, p. 731)

Willingness to Participate in Passive Data Collection

General reasons which influence survey participation

- Respondent's interest in the topic
- Questionnaire length/ Demanded time for participation

Level of data apprehension

Attitudes towards their data privacy

Familiarity with new technologies

Technology skills' level

2

3

Data collection knowledge

What could influence willingness?



(Keusch et al., 2021; Struminskaya et al., 2021)



Research Questions

- RQ1: Can smartphone users be differentiated in terms of the types of activities that they use their devices for?
- RQ2: What **explains** variation in smartphone usage behaviours (e.g., socio demographic characteristics, attitudes)?
- RQ3: How do **smartphone usage** habits relate to **willingness** to agree to passive data collection via an app?

Data: Selects civique.org

Sample size consisted of 2175 individuals from the French-Speaking part of Switzerland

Experimental design

- Group 1 (n=1'088) online panel via a web browser
- Group 2 (n=1'087)

 online panel via mobile application

31.6% (n=687) response rate for the first wave in both methods of data collection Dataset was filtered to select only those who had a smartphone (n=570)

Roberts et al., 2020

Measures

online	
Reading/ writing emails	
Taking photographs	
Using social media	
Posting on social media	
Shopping	
Banking	
Installing new apps	iables
Using GPS	Var
Connecting via Bluetooth	vioral
Gaming	hav
Media	B

Browsing

Likes technology The internet as a communication tool

Problem solving knowledge Being anonymous online The internet is trustworthy

Attitudinal Variables - Internet

Personal data being collected Data shared without consent Data used for personalized ads Identity theft

Gender Age categories Occupation Frequency of smartphone use Education level

Data

Attitudinal Variables

To share mobile devices use To share fitness records To connect devices via

Bluetooth

Willingness Variables

RQ1: Can smartphone users be differentiated in terms of the types of activities that they use their devices for?



Analytical Approach – Exploratory Methods





Results: Cluster Analysis

Cluster 1: Data – Risk Tolerant

Cluster 2: Data – Risk Averse



11



N=371

Results: Cluster Analysis

Cluster 1: Data – Risk Tolerant

Cluster 2: Data – Risk Averse

N=183



12

Results: Cluster Analysis

Cluster 1: Data – Risk Tolerant

Cluster 2: Data – Risk Averse

N=183



N=371

13

Results: Multiple Correspondence Analysis



Graphical visualization of the combination





Dark blue ellipse represents first dimension





Dark blue ellipse represents the first dimension

Green ellipse represents the second dimension



Smartphone users can be differentiated in terms of the type of activities that they use their devices for



RQ2: What explains variation in smartphone usage behaviors (e.g., socio demographic characteristics, attitudes)?



Analytical Approach – Inferential Statistics



- Personal data being collected
- Data shared without consent
- Identity theft
- Data used for personalized ads

- Likes technology
- The internet as a communication tool
- Problem solving knowledge
- Being anonymous
- The internet as a privacy threat
- The internet is trustworthy

- Gender
- Age category
- Education level
- Frequency of smartphone use

Results: Logistic Regression





Female Exp(B) = 1.57*

≤40 years old Exp(B) = 2.82***

High smartphone frequency use Exp(B) = 2.99**

A little bit worried of personal data being collected Exp(B) = 7.44**

Variation is explained by sociodemographic characteristics



86% of people between 18-29 y/o and 77% between 30-49 y/o are users

54% of users are female

on average users spend 35
 minutes a day on the platform.
 96% trough a smartphone



67% of people between 18-29 y/o are users

51% are females

on average users spend 53 minutes a day on the platform

khoros.com, 2020

RQ3: How do smartphone usage habits relate to willingness to agree to passive data collection tasks?



Analytical Approach – Inferential Statistics



Results: OLS Regression









≤ 40 years old B = 0.56*** Sum Scores – Attitudes towards the internet B = 0.11*** Sum Scores – Attitudes towards their data being online B = 0.18***

Data Risk – Tolerant (Cluster 1) B = 0.39.

Smartphone usage habits with apps where data is exposed are positively related to willingness



Limitations

From survey



Specific target population, low response rates



Different methods of data collection; samples pooled

From analysis



Both experimental groups were considered as one

Conclusion



- Smartphone users can be differentiated by the activities that they use their smartphones for
- This differentiation is mainly explained by sociodemographic characteristics
- There is a connection between using applications where data is highly exposed and stated willingness to agree to passive data collection
- Attitudes seem to be more important to explain hypothetical willingness, yet it will be important to see how behaviors might be linked to actual compliance of requests.
- Results confirm: Keush et al. (2019); Jäckle et al. (2019); Revilla et al. (2019); Wenz et al. (2019); Anshari et al. (2016); Tessem et al. (2019)

THANK YOU FOR YOUR ATTENTION



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